CLAIMS

1. A context-aware system comprising:

a computer configured to be mounted in a vehicle, the computer comprising one or more processors and computer-readable media associated with the one or more processors;

one or more applications resident on the computer-readable media and configured to be executed on the one or more processors;

one or more context providers operably associated with the computer and configured to provide context information;

a context service module configured to receive context information from the one or more context providers and determine a vehicle context; and

a behavior engine operably associated with the computer and configured to, responsive to the vehicle context, adjust a behavior of the one or more applications so that the one or more applications behave in a manner that is consistent with a current vehicle context.

2. The context-aware system of claim 1, wherein at least one context provider is located on a vehicle in which the computer is mounted.

3. The context-aware system of claim 1, wherein at least one context provider is located remotely from a vehicle in which the computer is mounted.

4.   The context-aware system of claim 1, wherein one or more of the context providers are configured to wirelessly receive information concerning a vehicle's context.

5.   The context-aware system of claim 1 further comprising at least one hierarchical tree structure resident on the computer-readable media and having multiple nodes each of which being associated with a context, the context service module being configured to determine a vehicle context by accessing the one hierarchical tree structure and traversing at least one of said nodes.

6.   The context-aware system of claim 1 further comprising:

a first hierarchical tree structure resident on the computer-readable media and having multiple nodes associated with a first context;

at least one second hierarchical tree structure resident on the computer-readable media and having multiple nodes associated with a second context, at least one node from the at least one second hierarchical tree structure being linked with one node on the first hierarchical tree structure by a link that is configured to enable a complete context to be derived from the first and second contexts; and

the context service module being configured to determine a vehicle context by accessing multiple hierarchical tree structures and traversing at least one of each of said multiple hierarchical tree structures.

7.   The context-aware system of claim 1, wherein the behavior engine is configured to adjust the behavior of the one or more applications based, at least in part, on user-specific context information.

8.   A vehicle comprising the context-aware system of claim 1.

9.   A method of operating a vehicle comprising:

receiving context information with a vehicle computer, the context information pertaining to a context of a vehicle in which the computer is mounted;

determining, from the context information and using the vehicle computer, a current vehicle context; and

modifying, with the vehicle computer, a behavior of the vehicle responsive to the current vehicle context.

10.   The method of claim 9, wherein the context information comprises user-specific information.

11.   The method of claim 9, wherein the context information comprises vehicle-specific information.

12.   The method of claim 9, wherein the context information comprises user-specific information that is resident on the vehicle's computer.

13. The method of claim 9, wherein the context information comprises user-specific information and said receiving comprises receiving the context information from a data store that is remote from the vehicle computer.

14. The method of claim 9, wherein the context information comprises user-specific information and said receiving comprises wirelessly receiving the context information from a data store that is remote from the vehicle computer.

15. The method of claim 9, wherein the context information comprises user-specific information and said receiving comprises receiving the context information from a data store via the Internet.

16. The method of claim 9, wherein said receiving comprises receiving the context information from one or more context providers that are mounted on the vehicle.

17. The method of claim 9, wherein said receiving comprises receiving context information from multiple context providers some of which being mounted on the vehicle, others of which not being mounted on the vehicle.

18. The method of claim 9, wherein said determining comprises determining the current vehicle context using a software-implemented context service module that can receive context information from multiple different context providers.

19. The method of claim 9, wherein said determining comprises determining the current vehicle context using a software-implemented context service module that can receive context information from multiple different context providers, the context service module being capable of wirelessly receiving at least some of the context information.

20. The method of claim 9, wherein said determining comprises determining a current user of the vehicle.

21. The method of claim 9, wherein said determining comprises making a decision, based upon the context information, about the likely context of the vehicle.

22. The method of claim 9, wherein said determining comprises:

accessing at least one hierarchical tree structure with the vehicle's computer, the one hierarchical tree structure having multiple nodes each of which being associated with a context; and

traversing at least one of the nodes to derive the vehicle's context.

23. The method of claim 9, wherein said modifying comprises modifying the behavior of one or more applications executing on the vehicle's computer.

24. One or more computer-readable media having computer-readable instructions thereon which, when executed by a computer, implement the method of claim 9.

25. A context-aware system comprising:

a computer configured to be mounted in a vehicle, the computer comprising one or more processors and computer-readable media associated with the one or more processors;

one or more applications resident on the computer-readable media and configured to be executed on the one or more processors;

one or more context providers operably associated with the computer and configured to provide context information for use in determining a vehicle context, at least some of the context providers receiving context information from sources remote from the vehicle in which the computer is mounted;

at least one hierarchical tree structure resident on the computer-readable media and having multiple nodes each of which being associated with a context;

a context service module configured to receive context information from the one or more context providers and determine a vehicle context, the context service module being configured to determine a vehicle context by accessing the one hierarchical tree structure and traversing at least one of said nodes; and

a behavior engine operably associated with the computer and configured to, responsive to a vehicle context that is determined by the context service, adjust a behavior of the one or more applications so that the one or more applications behave in a manner that is consistent with a current vehicle context.

26. The context-aware system of claim 25, wherein one or more of the context providers are configured to wirelessly receive information concerning a vehicle's context.

27. A vehicle comprising the context-aware system of claim 25.

28. A location-aware system comprising:

a computer configured to be mounted in a vehicle, the computer comprising one or more processors and computer-readable media associated with the one or more processors;

one or more applications resident on the computer-readable media and configured to be executed on the one or more processors;

one or more location providers operably associated with the computer and configured to provide location information for use in determining a vehicle location;

a location service module configured to receive location information from the one or more location providers and determine a vehicle location; and

a behavior engine operably associated with the computer and configured to, responsive to a vehicle location that is determined by the location service, adjust a behavior of the one or more applications so that the one or more applications behave in a manner that is consistent with a current vehicle location.

29. The location-aware system of claim 28, wherein at least one location provider is located remotely from a vehicle.

30. The location-aware system of claim 28, wherein at least one location provider is configured to receive information that is wirelessly transmitted from a location that is remote from the vehicle.

31. The location-aware system of claim 28, wherein multiple location providers are configured to receive information that is wirelessly transmitted from a location that is remote from the vehicle.

32. The location-aware system of claim 28 further comprising at least one hierarchical tree structure resident on the computer-readable media and having multiple nodes each of which being associated with a location, the location service module being configured to determine a vehicle location by accessing the one hierarchical tree structure and traversing at least one of said nodes.

33. The location-aware system of claim 28 further comprising:

a first hierarchical tree structure resident on the computer-readable media and having multiple nodes associated with first locations;

at least one second hierarchical tree structure resident on the computer-readable media and having multiple nodes associated with second locations, at least one node from the at least one second hierarchical tree structure being linked with one node on the first hierarchical tree structure by a link that is configured to enable a complete location to be derived from the first and second locations; and

the location service module being configured to determine a vehicle location by accessing multiple hierarchical tree structures and traversing at least one of each of said multiple hierarchical tree structures.

34. The location-aware system of claim 28, wherein the behavior engine is configured to adjust the behavior of the one or more applications based, at least in part, on user-specific location information.

35. The location-aware system of claim 28, wherein the behavior engine is configured to adjust the behavior of the one or more applications based, at least in part, on user-specific location information that is maintained on the vehicle's computer.

36. The location-aware system of claim 28, wherein the behavior engine is configured to adjust the behavior of the one or more applications based, at least in part, on user-specific location information that is maintained in a data store that is remote from the vehicle in which the computer is mounted.

37. The location-aware system of claim 28, wherein the behavior engine is configured to adjust a behavior of the one or more applications by causing an Internet connectivity application to call only local telephone numbers to establish an ISP connection.

38. A method of operating a vehicle comprising:

receiving location information with a vehicle computer, the location information pertaining to a location of a vehicle in which the computer is mounted;

determining, from the location information and using the vehicle computer, a current vehicle location; and

modifying, with the vehicle computer, a behavior of the vehicle responsive to the current vehicle location.

39. The method of claim 38, wherein the location information comprises user-specific location information.

40. The method of claim 38, wherein the location information comprises user-specific location information, and said receiving comprises receiving the location information from a data store that is remote from the vehicle computer.

41. The method of claim 38, wherein the location information comprises user-specific location information, and said receiving comprises receiving the location information from a data store via the Internet.

42. The method of claim 38, wherein said determining comprises determining the current vehicle location using a software-implemented location service module that can receive location information from multiple different location providers.

43. The method of claim 38, wherein said determining comprises:

accessing at least one hierarchical tree structure with the vehicle's computer, the one hierarchical tree structure having multiple nodes each of which being associated with a location; and

traversing at least one of the nodes to derive the vehicle's location.

44. The method of claim 38, wherein said determining comprises:

accessing (1) a first hierarchical tree structure resident on the vehicle's computer, the tree structure having multiple nodes associated with first locations, and (2) at least one second hierarchical tree structure having multiple nodes associated with second locations, at least one node from the at least one second hierarchical tree structure being linked with one node on the first hierarchical tree structure by a link that is configured to enable a complete location to be derived from the first and second locations; and

traversing at least portions of the first and second hierarchical tree structures.

45. One or more computer-readable media having computer-readable instructions thereon which, when executed by a computer, implement the method of claim 38.

46. A vehicle having a computer that is configured to implement the method of claim 38.

47.   A user-aware vehicle comprising:

a computer having one or more processors; and

at least one data store accessible to the computer and being configured to contain user information pertaining to user preferences that are associated with one or more vehicle contexts, the computer being configured to access the one data store, retrieve user preferences, and configure a vehicle in accordance with a user's preferences.

48.   The user-aware vehicle of claim 47, wherein said at least one data store is located on the vehicle.

49.   The user-aware vehicle of claim 47, wherein said at least one data store is not located on the vehicle.

50.   The user-aware vehicle of claim 47, wherein the computer is configured to wirelessly access the one data store.

51.   A user-aware vehicle comprising:

a computer having one or more processors; and

at least one data store accessible to the computer and being configured to contain user information pertaining to user preferences that are associated with one or more vehicle locations, the computer being configured to access the one data store, retrieve user preferences, and configure a vehicle in accordance with a user's preferences.

52. The user-aware vehicle of claim 51, wherein said at least one data store is located on the vehicle.

53. The user-aware vehicle of claim 51, wherein said at least one data store is not located on the vehicle.

54. A method of operating a vehicle comprising:

maintaining a data store that contains user preferences associated with one or more vehicle contexts;

accessing the data store;

retrieving from the data store one or more user preferences associated with a vehicle user; and

configuring a vehicle in accordance with the retrieved user preferences.

55. The method of claim 54, wherein said maintaining comprises maintaining the data store on a vehicle.

56. The method of claim 54, wherein said maintaining comprises maintaining the data store remote from a vehicle that is configured in accordance with preferences that are contained in the data store.

57. The method of claim 54, wherein said accessing comprises wirelessly accessing the data store.

58. The method of claim 54, wherein said accessing comprises wirelessly accessing the data store via a computer that is located on a vehicle that is to be configured in accordance with user preferences that are contained in the data store.

59. The method of claim 54, wherein the user preferences are associated with one or more vehicle locations.

60. One or more computer-readable media having computer-readable instructions thereon which, when executed by a computer, implement the method of claim 54.

61. A method of operating a vehicle comprising:

accessing a data store that contains user preferences associated with one or more vehicle contexts;

retrieving from the data store one or more user preferences associated with a vehicle user; and

configuring a vehicle in accordance with the retrieved user preferences.

62. The method of claim 61, wherein said accessing comprises wirelessly accessing the data store.

63. The method of claim 61, wherein said accessing comprises wirelessly accessing the data store via a computer that is located on a vehicle that is to be configured in accordance with user preferences that are contained in the data store.

64. The method of claim 61, wherein said accessing comprises wirelessly accessing the data store via the Internet using a computer that is located on a vehicle that is to be configured in accordance with user preferences that are contained in the data store.

65. One or more computer-readable media having computer-readable instructions thereon which, when executed by a computer, implement the method of claim 61.

66. A location-aware system comprising:

a radio having radio station buttons for selecting a radio station;

a computer operably associated with the radio and configured to be mounted in a vehicle, the computer comprising one or more processors and computer-readable media associated with the one or more processors;

one or more applications resident on the computer-readable media and configured to be executed on the one or more processors, one application being configured to map individual radio stations to specific radio station buttons;

one or more location providers operably associated with the computer and configured to provide location information for use in determining a vehicle location;

a location service module configured to receive location information from the one or more location providers and determine a vehicle location; and

a behavior engine operably associated with the computer and configured to, responsive to a vehicle location that is determined by the location service module, cause said one application to map radio stations that are associated with a determined location to individual radio station buttons.

67. The location-aware system of claim 66, further comprising a data store communicatively linked with the computer and configured to hold user preferences that associate radio stations with various locations.

68. The location-aware system of claim 66, further comprising a data store remote from a vehicle in which the computer is mounted and communicatively linked with the computer and configured to hold user preferences that associate radio stations with various locations.

69. The location-aware system of claim 66 further comprising at least one hierarchical tree structure resident on the computer-readable media and having multiple nodes each of which being associated with a location, the location service module being configured to determine a vehicle location by accessing the one hierarchical tree structure and traversing at least one of said nodes.

70. The location-aware system of claim 66 further comprising:

a first hierarchical tree structure resident on the computer-readable media and having multiple nodes associated with first locations;

at least one second hierarchical tree structure resident on the computer-readable media and having multiple nodes associated with second locations, at least one node from the at least one second hierarchical tree structure being linked with one node on the first hierarchical tree structure by a link that is configured to enable a complete location to be derived from the first and second locations; and

the location service module being configured to determine a vehicle location by accessing multiple hierarchical tree structures and traversing at least one of each of said multiple hierarchical tree structures.

71. A location-aware vehicle comprising:

a radio having radio station buttons for selecting a radio station;

means for determining a location of a vehicle;

means for ascertaining radio stations that are associated with a determined location; and

means for automatically mapping the ascertained radio stations to the radio station buttons.

72. The location-aware vehicle of claim 71 further comprising means for determining when a vehicle location has changed, said means for ascertaining being configured to ascertain radio stations that are associated with a new location, said means for automatically mapping the ascertained radio stations being configured to automatically map radio stations associated with the new location to the radio station buttons.

73. A method of operating a vehicle comprising:

determining a location of a vehicle using a computer that is mounted in the vehicle;

for a given location, automatically mapping, using the computer, radio station that are associated with the determined location to radio station buttons on the radio.

74. The method of claim 73 further comprising using user-specified preferences to determine which radio stations to map to the radio station buttons.

75. The method of claim 73 further comprising retrieving user-specified preferences from a remote data store, the preferences being used to determine which radio stations to map to the radio station buttons.

76. The method of claim 73 further comprising retrieving user-specified preferences from a remote data store by establishing an Internet connection and then retrieving the preferences using the Internet connection, the preferences being used to determine which radio stations to map to the radio station buttons.

77. The method of claim 73, wherein said determining comprises using at least one hierarchical tree structure that is accessible to the computer, said structure having multiple nodes each of which being associated with a location, the location being determined by traversing at least one of said nodes.

78. One or more computer-readable media having computer-readable instructions thereon which, when executed by a computer, implement the method of claim 73.

79. A vehicle having a programmable computer that is programmed with instructions which, when executed by the computer, implement the method of claim 73.

80. A method of operating a vehicle comprising:

determining a location of a vehicle using a computer that is mounted in the vehicle;

for a given location, automatically mapping, using the computer, radio stations associated with user-specified radio station types associated with the determined location to radio station buttons on the radio.

81. The method of claim 80 further comprising accessing a list that associates radio station types, locations and radio station frequencies so that the radio stations can be mapped to the radio station buttons.

82. The method of claim 80 further comprising accessing a list that is resident on the computer that associates radio station types, locations and radio station frequencies so that the radio stations can be mapped to the radio station buttons.

83. The method of claim 80 further comprising accessing a list via the Internet with the computer, the list associating radio station types, locations and radio station frequencies so that the radio stations can be mapped to the radio station buttons.

84. The method of claim 80, wherein said determining comprises using at least one hierarchical tree structure that is accessible to the computer, said structure having multiple nodes each of which being associated with a location, the location being determined by traversing at least one of said nodes.

85. One or more computer-readable media having computer-readable instructions thereon which, when executed by a computer, implement the method of claim 80.

86. A vehicle having a programmable computer that is programmed with instructions which, when executed by the computer, implement the method of claim 80.

87. A location-aware system comprising:

a computer comprising one or more processors and computer-readable media associated with the one or more processors;

one or more applications resident on the computer-readable media and configured to be executed on the one or more processors;

one or more location providers operably associated with the computer and configured to provide location information for use in determining a vehicle location;

a location service module configured to receive location information from the one or more location providers and determine a vehicle location by using at least one hierarchical tree structure resident on the computer-readable media and having multiple nodes each of which being associated with a location, the location service module being configured to determine a vehicle location by accessing the one hierarchical tree structure and traversing at least one of said nodes; and

at least one of said one or more applications being configured to provide a user with information that is associated with the vehicle's location as determined by the location service module.

88. The location-aware system of claim 87, wherein the information that is provided to the user is associated with one or more user-specified preferences.

89. The location-aware system of claim 87, wherein the location service module determines a vehicle location by using multiple hierarchical tree structures each of which having multiple nodes that are associated with locations.

90. A vehicle embodying the location-aware system of claim 87.

91. A method of operating a vehicle comprising:

receiving, with a vehicle-mounted computer, location information pertaining to a location of a vehicle;

accessing at least one hierarchical tree structure, using the vehicle-mounted computer, the structure having multiple nodes each of which being associated with a location;

using the location information to identify a node on the at least one hierarchical tree structure;

traversing multiple nodes of the at least one hierarchical tree structure to derive a vehicle location; and

responsive to a derived vehicle location, providing a user of the vehicle with information associated with the derived location.

92. The method of claim 91, wherein said providing of the information to the user comprises providing information that is associated with user-provided preferences.

93. One or more computer-readable media having computer-readable instructions thereon which, when executed by a computer, implement the method of claim 91.

94. A vehicle having a computer that is programmed with instructions that implement the method of claim 91.

95. A method of operating a vehicle comprising:

collecting user preferences that pertain to a user-desired experience associated with operation of a vehicle;

storing the user preferences in a computer-accessible location;

authenticating a user to a vehicle;

retrieving the authenticated user's preferences from the computer-accessible location using a computer that is mounted in a vehicle that the user is to operate; and

configuring the vehicle in some manner in accordance with the user's preferences.

96. The method of claim 95, wherein said storing comprises locally storing user preferences on the computer.

97. The method of claim 95, wherein said storing comprises storing user preferences at a location that is remote from the vehicle.

98. The method of claim 95, wherein said storing comprises storing user preferences at a Internet-accessible location that is remote from the vehicle, and said retrieving comprises retrieving the user's preferences over the Internet.

99. One or more computer-readable media having computer-readable instructions thereon which, when executed by a computer, implement the method of claim 95.

100. A method of operating a vehicle comprising:

authenticating a user to a vehicle that has an onboard computer;

retrieving preferences for the authenticated user from a computer-accessible location using the onboard computer; and

configuring the vehicle in some manner in accordance with the user's preferences.

101.   The method of claim 100, wherein said retrieving comprises retrieving the preferences from a location that is remote from the vehicle.

102.   A vehicle configured to implement the method of claim 100.

103.   A rental vehicle configured to implement the method of claim 100.